STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
REPORT OF EXAMINATION
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON
DRAFT

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
March 10, 2008	G2-30460		

NAME
SEH America, Inc. (SEH)

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
4111 NE 112th Avenue	Vancouver	WA	98682-6776

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Well(s)

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE FEET PER YEAR
	2,250	3,630

QUANTITY, TYPE OF USE, PERIOD OF USE
Industrial, continuous

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
Wells will be installed within the boundaries of SEH's facility, located at 4111 NE 12th Avenue, Vancouver, Wash.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
SW1/4	15	2N	2E	28	Clark
NW1/4	22	2N	2E	28	Clark
N1/2	58	2N	2E	28	Clark

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Attached

DESCRIPTION OF PROPOSED WORKS

The project consists of up to four new wells (Wells 8 through 11) to be located at SEH's facility in Vancouver, Washington. The wells will supply water for SEH's silicon chip manufacturing operations. Water will be conveyed from the wells to one or more reverse-osmosis (RO) treatment units before being conveyed to the plant for use. The well(s) are expected to be pumped more or less continuously to supply the plant requirements. The project does not include any significant water storage.

Most of the reject water from the RO units (approximately 45 percent of the influent) will be reinjected into the subsurface or discharged into nearby Burnt Bridge Creek via a permitted outfall; a small portion of the reject water will be used for industrial purposes before being treated and discharged to the municipal wastewater system.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
January 1, 2010	January 1, 2014	January 1, 2018

REPORT

BACKGROUND

Description and Purpose of the Project

SEH submitted a Water Right Application (file G2-30460) for a permit to appropriate public groundwater from two proposed wells at a maximum instantaneous rate (Qi) of 4,000 gallons per minute (gpm) and a maximum annual quantity (Qa) of 6,452 acre-feet/year (ac-ft/yr), year round as needed for industrial supply. Washington State Department of Ecology (Ecology) assigned the application a priority date of March 10, 2008. SEH subsequently indicated that it wishes to install up to four new wells (Wells 8 through 11) in conjunction with this permit and to change the requested Qi to 2,250 gpm and the requested Qa to 3,630 ac-ft/yr. All wells would be located at SEH's facility in Vancouver, Washington. The wells would target the Sand and Gravel Aquifer (SGA) of the Portland Basin deep aquifer system.

SEH is presently authorized to withdraw water from six existing wells under two certificated rights and one permit, as summarized below in Table 1.

Table 1. Summary of SEH America Water Rights

File Number	Type	Priority Date	Qi (gpm)	Qa (ac-ft/yr)	Associated Wells	Aquifer System
G2-26717	Certificate	06/06/85	500	807	1, 2	Shallow (UTA)
G2-26574	Certificate	08/02/84	2,000	2,452	4, 5, 6	Deep (SGA)
G2-29391	Permit	05/21/96	2,000	3,226	4, 5, 6, 7	Deep (SGA)
G2-30460	Application	03/10/08	2,250	3,630	8, 9, 10, 11 (proposed)	Deep (SGA)

Two other wells, Well A and Well 3, are located on the SEH property. Both these wells tap the Upper Troutdale Aquifer (UTA) of the Portland Basin shallow aquifer system and are configured as monitoring wells.

Legal Requirements for Application Processing

Chapters 90.03 and 90.44 RCW authorize the appropriation of public water for beneficial use and describe the process for obtaining water rights. Laws governing the water right permitting process are contained in RCW 90.03.250 through 90.03.340 and RCW 90.44.060.

The following legal requirements must be met prior to processing a water right application:

Public Notice—Public notice of the application was published in the Columbian newspaper on March 31, and April 7, 2008. There were no protests received during the statutory 30-day protest period; and,

State Environmental Policy Act (SEPA)— The subject water right application is categorically exempt under SEPA WAC 197-11-305 and WAC 197-11-800(4) because the instantaneous quantity does not exceed the 2,250 gallons per minute threshold.

INVESTIGATION

This investigation included review of the following documents:

Records of water rights and well logs in the vicinity;

Topographic and local area maps;

Aspect Consulting. 2005. Completion Report, Permit No. G2-26574. Prepared by Aspect Consulting, LLC, December 9, 2005;

Ellis, C., J. Purdy, and F.M. Krautkramer. 1998. Hydrogeologic Characterization in Support of SEH America Water Right Application. Prepared by Robinson & Noble, Inc., April 1998;

Ellis, C., J.W. Purdy, and J.B. Noble. 1992. City of Vancouver Investigation of the Sandy River Mudstone Aquifer. Prepared by Robinson & Noble, Inc., April 1992;

Koreny, J.S. and Fisk, T.T. 2000. Hydraulic Continuity of the Portland Basin Deep Aquifer System. Environmental and Engineering Geoscience, Vol. VI, No. 3, August 2000;

McFarland, W.D. and D.S. Morgan. 1996. Description of the Ground-Water Flow System in the Portland Basin, Oregon, and Washington. USGS Water Supply Paper 2470-A;

Mundorff, M.J. 1964. Geology and Ground-Water Conditions of Clark County, Washington, with a Description of a Major Alluvial Aquifer along the Columbia River. USGS Water Supply Paper 1600;

Pacific Groundwater Group (PGG). 2008. Technical Information in Support of Clark Public Utilities South Lake Wellfield Water Right Application G2-30381. Prepared for Clark Public Utilities, Vancouver, Washington. January 8, 2008; and,

Swanson, R.D., W.D. McFarland, J.B. Gonthier, and J.M Wilkinson. 1993. A Description of Hydrogeologic Units in the Portland Basin, Oregon and Washington. USGS Water Resources Investigation Report 90-4196.

Geographic Setting

The SEH facility is located in southwestern Washington approximately three miles north of the Columbia River in the Orchards area of Vancouver, Washington. The site is located within the Burnt Bridge Creek sub-basin approximately one-half mile south of Burnt Bridge Creek. The site is relatively flat and lies at an elevation of approximately 210 feet above mean sea level (MSL).

Purpose of Use

The applicant requests groundwater for industrial supply, to be used continuously, year round, as needed. SEH will use the water in the manufacture and processing of silicon wafers for the semiconductor industry. The water requested by this application is intended to be used in a new manufacturing facility for the production of 16-inch silicon wafers. The basis for the requested quantity is a series of internal engineering estimates made by SEH. Only the amount actually put to beneficial use under the water right permit will be included on a water right certificate.

Hydrogeology

The project site is located within the Portland Basin geological province. The Portland Basin encompasses the cities of Portland, Oregon, and Vancouver, Washington, and extends over an area of about 900 square miles. The basin is filled with approximately 1,400 feet of sedimentary deposits; these deposits host the major aquifers in this region.

The hydrostratigraphic units within the Portland Basin, from youngest to oldest, are described below. The nomenclature follows the unified classification for the Portland Basin presented in Koreny and Fisk (2000).

Unconsolidated Sediments (US). This unit, also known as the Recent Alluvial Aquifer (RAA), forms the uppermost, unconfined aquifer throughout most of the basin, and consists primarily of fine-grained silts and sands;

Undifferentiated Gravel Aquifer (UGA). This unit generally consists of coarse- to very coarse-grained sediments and includes both the Pleistocene Alluvial Aquifer (PAA) and Troutdale Gravel Aquifer (TGA). This unit and the overlying US comprise are highly productive and together comprise the Portland Basin shallow aquifer system;

Confining Unit 1 (C1). This regionally extensive unit isolates the shallow aquifer system from the deep aquifer system. It consists primarily of silt and clay (often described in well logs as "sticky") ranging in thickness throughout the Portland Basin from 50 to almost 300 feet. This unit is roughly 100 feet thick in the project area;

Troutdale Sandstone Aquifer (TSA). This unit is composed of sandstone, conglomerate, and fine to medium sand and silt. This unit is not recognized everywhere in the basin. Where the TSA is absent, Confining Unit 1 is in contact with, and indistinguishable from, Confining Unit 2. Based on similarities in head (just above sea level) and response to pumping, recent interpretations are that the TSA is interconnected with the Sand and Gravel Aquifer, at least in the Vancouver area;

Confining Unit 2 (C2). This unit is lithologically similar to C1. In places, C2 is interfingered with the TSA and the Sand and Gravel Aquifer and does not appear to hydraulically separate the two aquifers in all locations; and,

Sand and Gravel Aquifer (SGA). This unit is generally composed of sandy gravel, silty sand, sand, and clay. In places, it is interfingered with C2 and TSA. The SGA, together with the TSA, forms the Portland Basin deep aquifer system. This unit directly overlies bedrock or may be separated from bedrock by a low-permeability silt and clay unit. Ellis and others (1996) estimate an overall trasmissivity of 120,000 gpd/ft and storativity of 0.00014 for the SGA. Recent aquifer testing at the proposed Clark Public Utilities (CPU) Vancouver Lake wellfield yielded estimates of transmissivity of 50,000 to 90,000 gpd/ft and storativity of 0.001 and 0.006, respectively.

Examination of the depths and well logs of the existing deep wells at SEH (Wells 4, 5, 6, and 7) indicates that these wells tap the SGA. This conclusion is consistent with interpretations of SEH wells presented by Ellis and others (1998), Koreny and Fisk (2000), and Aspect Consulting (2005). The SGA is also the target aquifer for the proposed well(s) associated with the present permit. A 9-hour pumping test conducted on Well 7 in 2008 resulted in less than 60 feet of drawdown at an average discharge rate of about 2,050 gpm. Production and water level records indicate that Wells 5, 6, and 7 readily sustain long-term discharge rates of 1,400 to 1,700 gpm.

In addition to the SEH wells, several other wells within the Burnt Bridge Creek Subbasin tap the deep aquifer system. These include wells owned by the City of Vancouver and Clark County Public Utilities (CPU) for municipal supply and the Washington State Department of Fish and Wildlife (WDFW) as emergency supply for the Vancouver Hatchery. Deep aquifer wells are summarized in Table 2.

Table 2. Deep-Aquifer Wells Within the Burnt Bridge Creek Subbasin

File No.	Owner	Well(s)	Qi (gpm)	Qa (ac-ft/yr)
G2-27670	City of Vancouver	Station 7	500	807
G2-27671 G2-28027 G2-28076	City of Vancouver	Ellsworth Springs Wellfield	3,000	2,420
G2-27950	WDFW	Vancouver Hatchery Well	2,000	3,226
G2-30381	CPU	South Lake Wellfield (in progress)	7,000	9,900
G2-26574 G2-29391	SEH	Wells 4, 5, 6, and 7	4,000	5,678

[(a)] Listed water rights are all senior to the subject application.

To evaluate the influence of withdrawals under this permit on these other wells, we estimated what the water-level in each of the other wells would be once withdrawals under this permit begin. This was accomplished by summing the operational drawdown caused by pumping of the well itself with the interference drawdown caused by pumping of the other wells in the subbasin, including SEH's withdrawals under this permit, and then combining the sum of these drawdowns with the static water level in each well to obtain the predicted water level. The predicted water level was then compared with the level of the top of the screen assembly to arrive at a safety margin (i.e., the remaining height of the water column in the well above the top of the screen). These analyses are summarized in Table 3 and indicate that all wells are expected to maintain an ample safety margin once withdrawals under this permit begin.

Table 3. Interference Analysis

Well	Distance from SEH (miles)	Available Drawdown (feet)	Operational Drawdown (feet)	Predicted Interference Drawdown			Safety Margin (feet)
				CPU South Lake Wellfield (feet)	SEH Withdrawals Under Water Right G2-29391 (feet)	SEH Withdrawals Under this Application (feet)	
Station 7, Well 2	1.3	503	97	14	22	24	346
Ellsworth Springs Well 1	2.6	537	94	14	16	17	396
Ellsworth Springs Well 2	2.6	440	102	14	16	17	291
Ellsworth Springs Well 3	2.6	545	84	15	16	17	413
Vancouver Hatchery Well	3.6	610	102	10	13	14	471
South Lake Wellfield	7.1	332	219	--	7	8	204

Our analysis used well construction information, operational drawdown estimates, and static water levels summarized by PGG (2008). Static water levels were measured in 2006 or 2007. Withdrawals begun or proposed since this time—and that are considered in our interference drawdown analysis—include those proposed under the present permit (3,630 ac-ft/yr), those begun by SEH under permit G2-29391 (3,226 ac-ft/yr), and those proposed by CPU under permit G2-30381 (9,900 ac-ft/yr).

Interference drawdown caused by the proposed withdrawals of CPU under permit G2-30381 were estimated by PGG (2008) using the Deep Aquifer Yield (DAY) model developed by the Portland Water Bureau (CH2M Hill 2001). Interference drawdown caused by proposed withdrawals under the present permit and those begun by SEH under permit G2-29391 were estimated using the Theis equation for confined aquifers (Halford and Kuniansky, 2002). The Theis analyses used a deep-aquifer transmissivity of 50,000 gpd/ft and a storativity of 0.001. These values yield the greatest (most conservative) drawdown predictions of any of the three estimates of aquifer properties presented by Ellis and others (1996) and PGG (2008).

Senior Water Rights

The source of supply for the withdrawals proposed for this application is considered to be the Portland Basin deep aquifer system, including the SGA and TSA. The deep aquifer system is separated from the shallow aquifer system by Confining Units 1 and/or 2 that, at the project site, consist of over 200 feet of soft or sticky clay. Within the Vancouver area, pumping of the SGA has not been observed to produce any discernable response in wells tapping the shallow aquifer system.

Ecology's Water Right Tracking System (WRTS) database was queried to identify senior groundwater rights associated with the deep aquifer system. Six senior water rights, other than those owned by SEH, were identified within the Burnt Bridge Creek subbasin. These rights are owned by the City of Vancouver, WDFW, and CPU and are listed in Table 2.

FINDINGS

In accordance with state law, the following considerations must be met before a permit can be issued:

- Water must be available
- There must be no impairment of existing rights
- The water use must be beneficial
- The water use must not be detrimental to the public interest

Water Availability

The proposed well(s) will target the deep aquifer system of the Portland Basin, a productive, regional water supply aquifer. Aquifer characteristics, pumping test results, and production and water-level data from existing deep SEH wells indicate that water is available for appropriation in the amount requested. Given the proximity of the proposed well(s) to the existing deep SEH production wells, the potential for excessive drawdown due to mutual interference of the SEH wells will need to be considered and addressed through proper well/wellfield design and operation.

Impairment to Existing Water Rights

Drawdown at deep aquifer wells in the area caused by withdrawals under this permit are predicted to range from 8 to 24 feet. These drawdowns, in conjunction with drawdowns from withdrawals under senior water rights, will leave an ample safety margin in the affected wells and will not lead to impairment.

Beneficial Use

The proposed industrial use is considered to be beneficial under RCW 90.54.020(1).

Public Interest Considerations

No detriment to the public interest was identified in evaluating this application.

RECOMMENDATIONS

Based on the investigation and findings described above, it is recommend that the request for a groundwater permit be issued for a maximum instantaneous withdrawal rate (Qi) of 2,250 gpm and a maximum annual withdrawal (Qa) of 3,630 ac-ft/yr The permit shall be issued subject to the following provisions.

All water wells constructed within the State shall meet the minimum standards for well construction and maintenance as provided under chapter 18.104 RCW. Washington Water Well Construction Act of 1971, and Chapter 173-160 WAC, Minimum Standards for Construction and Maintenance of Wells. Any additional wells drilled under this water right shall be constructed within the SGA aquifer system.

Installation and maintenance of an access port as described in WAC 173-160-291 is required on any additional wells drilled under this water right. An air-line and gauge may be installed in addition to the access port.

Water use data shall be recorded weekly. The maximum monthly rate of withdrawal and the monthly total volume shall be submitted to Ecology by January 31st of each calendar year.

Reported water use data shall be submitted via the Internet or by using the enclosed forms. To set up an internet account, access https://forteress.wa.gov/ecy/wrx/Meteringx/. If you have questions or need additional forms, contact the Southwest Regional office.

An approved metering device shall be installed and maintained for each well used under this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use," Chapter 173-1 73 WAC. Installation, operation, and maintenance requirements are enclosed as a document titled "Water Measurement Device Installation and Operation Requirements." http://www.ecy.wa.gov/programs/wr/measuringhome.html.

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

The applicant is advised that the certificate will issue for only that quantity of water that has been withdrawn and applied to actual beneficial use. Such quantity applied to actual beneficial use shall not exceed the quantity specified in this report of examination and will be calculated on the basis of the best information available to Ecology, including metering data and/or water duty analysis. The applicant is advised that the quantity of water allocated by this permit may be reduced at the time of final certifications reflect system capacity and actual usage.

A water right certificate shall not be issued until a final investigation has been made.

CONCLUSION

In accordance with chapters 90.03 and 90.44 RCW, I find that there is water available for this beneficial appropriation from the source in question and that the appropriation as authorized will not impair existing rights or be detrimental to the public interest. Therefore, a permit should be issued, subject to the above-indicated provisions.

REVIEWED BY _____ DATE_____
Phil Crane

FINDINGS OF FACT AND DECISION

Upon reviewing the above report, I find all facts, relevant and material to the subject application: have been thoroughly investigated. Furthermore, I find water is available for appropriation and the appropriation as recommended is a beneficial use and will not be detrimental to existing rights or the public welfare. Therefore, I ORDER a permit be issued under Ground Water Application Number G2-29174, subject to existing rights and indicated provisions, to allow appropriation of public ground water for the amount and uses specified in the foregoing report.

Signed at Olympia, Washington, this _____ day of _____, 2009.

Thomas Loranger
Water Resources Section Manager
Southwest Regional Office

REFERENCES

Aspect Consulting. 2005. Completion Report, Permit No. G2-26574. Prepared by Aspect Consulting, LLC, December 9, 2005

CH2M Hill. 2001. Deep Aquifer Yield Groundwater Flow Model, Report on Model Development, Calibration, and Testing. Prepared for Portland Water Bureau, Portland, Oregon. July 2001.

Ellis, C., J. Purdy, and F.M. Krautkramer. 1998. Hydrogeologic Characterization in Support of SEH America Water Right Application. Prepared by Robinson & Noble, Inc., April 1998

Ellis, C., J.W. Purdy, and J.B. Noble. 1992. City of Vancouver Investigation of the Sandy River Mudstone Aquifer. Prepared by Robinson & Noble, Inc., April 1992

Koreny, J.S. and Fisk, T.T. 2000. Hydraulic Continuity of the Portland Basin Deep Aquifer System. Environmental and Engineering Geoscience, Vol. VI, No. 3, August 2000

McFarland, W.D. and D.S. Morgan. 1996. Description of the Ground-Water Flow System in the Portland Basin, Oregon, and Washington. USGS Water Supply Paper 2470-A

Mundorff, M.J. 1964. Geology and Ground-Water Conditions of Clark County, Washington, with a Description of a Major Alluvial Aquifer along the Columbia River. USGS Water Supply Paper 1600

Pacific Groundwater Group (PGG). 2008. Technical Information in Support of Clark Public Utilities South Lake Wellfield Water Right Application G2-30381. Prepared for Clark Public Utilities, Vancouver, Washington. January 8, 2008.

Swanson, R.D., W.D. McFarland, J.B. Gonthier, and J.M Wilkinson. 1993. A Description of Hydrogeologic Units in the Portland Basin, Oregon and Washington. USGS Water Resources Investigation Report 90-4196.

Halford, K.J. and E.L. Kuniansky. 2002. Documentation of Spreadsheets for the Analysis of Aquifer-Test and Slug-Test Data. USGS Open-File Report 02-197.

LEGAL DESCRIPTION OF PLACE OF USE

Real property situated in Clark County, Washington, being a portion of the Southwest quarter of Section 15, the Southeast quarter of Section 16, the Northeast quarter of Section 21, and the Northwest quarter of Section 22, Township 2 North, Range 2 East of the Willamette Meridian, more particularly described as follows:

Beginning at the corner common to said Section 15, 16, 21, and 22; thence South 88° 10' 48" West 31.05 feet to a point on the Easterly right-of-way line of N.E. 112th Avenue as shown on the plat of Quadrant Business Park Vancouver, recorded in Book H of Plats at Page 140, records of said county, said point being the true point of beginning, said point also being on the arc of a 1110.00 foot radius curve; thence along said right-of-way line, and from a tangent bearing of North 1° 19' 42" East along said curve to the right, through a central angle of 3° 53' 08", an arc distance of 75.28 feet to a point of compound curvature with a 50.00 foot radius curve; thence along said curve to the right, through a central angle of 94° 19' 42", an arc distance of 82.32 feet to a point of tangency, said point being on the Southerly right-of-way line of N.E. 39th Street, according to said plat; thence along said Southerly right-of-way line the following courses:

South 80° 27' 28" East 376.45 feet to a point of curvature with a 530.00 foot radius curve; thence along said curve to the left, through a central angle of 8° 27' 59", an arc distance of 78.32 feet to a point of tangency; thence South 88° 55' 27" East 223.98 feet

to the East end of said N.E. 39th Street, according to said plat; thence North 1° 36' 06" East 60.00 feet to a point on the Northerly right-of-way line of said N.E. 39th Street, according to said plat; said point being the Southeast corner of Quadrant Business Park – Phase 2, according to the plat thereof, recorded in Book H of Plats at Page 276, records of said county; thence along said right-of-way line the following courses:

North 88° 55' 27" West 224.53 feet to a point of curvature with a 470.00 foot radius curve; thence along said curve to the right, through a central angle of 1° 53' 09", an arc distance of 15.47 feet

to the Southwest corner of said Quadrant Business Park – Phase 2, said point also being the Southeast corner of Quadrant Business Park – Phase 3, according to the plat thereof, recorded in Book H of Plats at Page 294, records of said county; thence on the line between said Quadrant Business Park – Phases 2 and 3 North 1° 36' 06" East 490.57 feet to the Northeast corner of said Quadrant Business Park – Phase 3; thence along the Northerly line of said Quadrant Business Park – Phase 3 the following courses:

North 89° 17' 35" West 255.23 feet;
North 89° 20' 02" West 133.30 feet

to a point on the Easterly right-of-way line of N.E. 112th Avenue; thence along said Easterly right-of-way line the following courses:

North 0° 39' 58" East 61.00 feet;
North 89° 20' 02" West 2.20 feet;
North 43° 54' 46" West 31.34 feet;
North 1° 30' 32" East 382.17 feet;
North 46° 17' 40" East 31.00 feet;
South 88° 55' 26" East 2.66 feet;
North 1° 04' 34" East 44.00 feet;
North 88° 55' 26" West 2.00 feet;
North 43° 42' 36" West 31.23 feet;
North 1° 30' 32" East 622.02 feet;
North 49° 14' 15" East 29.72 feet;
South 88° 28' 04" East 2.86 feet;
North 1° 31' 56" East 60.00 feet;
North 88° 28' 04" West 4.01 feet;
North 46° 50' 11" West 29.42 feet;
North 0° 21' 46" East 43.33 feet;

thence leaving said Easterly right-of-way line South 88° 28' 04" East 1300.21 feet; thence South 1° 37' 43" West 647.68 feet; thence South 88° 58' 36" East 712.74 feet; thence South 1° 37' 10" West 256.15 feet; thence South 88° 58' 54" East 327.28 feet; thence South 1° 35' 55" West 135.01 feet; thence South 88° 58' 54" East 240.01 feet to a point on the Westerly right-of-way line of N.E. 122nd Avenue; thence along said right-of-way line South 1° 35' 55" West 565.83 feet; thence leaving said right-of-way line North 88° 34' 26" West 626.75 feet; thence South 1° 35' 55" West 251.70 feet; thence South 88° 28' 59" East 138.87 feet; thence South 1° 35' 24" West 179.69 feet; thence South 1° 35' 14" West 179.69 feet; thence South 1° 39' 13" West 136.72 feet; thence North 88° 55' 27" West 468.50 feet; thence South 0° 42' 31" West 450.18 feet; thence South 87° 53' 28" East 9.27 feet; thence South 1° 36' 06" West 665.50 feet; thence North 87° 53' 28" West 981.75 feet; thence North 1° 36' 06" East 459.65 feet; thence North 87° 53' 28" West 330.58 feet; thence North 1° 19' 42" East 436.01 feet to a point on the Southerly right-of-way line of N.E. 37th Circle, according to said plat of Quadrant Business Park Vancouver, said point being on the arc of a 60.00 foot radius curve; thence along said right-of-way line, and from a tangent bearing of North 63° 13' 34" East along said curve to the left, through a central angle of 151° 53' 52", an arc distance of 159.07 feet to a point of tangency, said point being on the Northerly right-of-way line North 88° 40' 18" West 320.00 feet to a point of curvature with a 50.00 foot radius curve; thence along said curve to the right, through a central angle of 90° 00' 00", an arc distance of 78.54 feet to a point of tangency, said point being on the Easterly right-of-way line of N.E. 112th Avenue, according to said plat of Quadrant Business Park Vancouver; thence along said Easterly right-of-way line North 1° 19' 42" East 464.33 feet to the true point of beginning; and

Lot 1, Quadrant Business Park – Phase 2, according to the plat thereof, recorded in Book H of Plats at Page 276, records of said County; and

Lot 1, Quadrant Business Park – Phase 3, according to the plat thereof, recorded in Book H of Plats at Page 294, records of said County.